Fun Science Activities to teach Child Development concepts!

Child Development Lesson Plans, Motivators, and hands on Activities.

Create fun science activities that will help promote learning and increase understanding. Each lesson focuses on a standard and objective using the Utah core standards.

Stephanie Nelson
Stnelson@alpineacademy.org

The Usborne Big Book of Science Things To Make and Do

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Child Development

Levels: Grades 9-12
Units of Credit: 0.50 to 1.00
CIP Code: 20.0102
Core Code: 34-01-00-00-020
Prerequisite: None
Skill Test: # 320

COURSE DESCRIPTION
This course provides students with an understanding of the aspects of human growth and development. Parenting skills are developed as positive guidance techniques and child-related issues are studied. Learning activities, observation techniques, and lab experiences in working with young children may be included. Student leadership (FCCLA) may be an integral part of the course.

NOTE: By Utah State law, parental or guardian consent is required for a student to participate in human sexuality instruction. State policy states that instruction includes the importance of marriage and the family, abstinence from sexual activity before marriage, and fidelity after marriage. Consult the local school district on its policy regarding the teaching of human sexuality and district approved instructional materials.

CORE STANDARDS, OBJECTIVES, AND INDICATORS

STANDARD 1
Students will evaluate parenting roles and responsibilities.

Objective 1: Recognize the characteristics and responsibilities of parenting.
a. Identify the importance of children in society.
b. Evaluate the rights of children and parents and the nature of parenting responsibilities. (physical, nurturing, and guidance)
c. Recognize that early childhood experiences impact individuals as adults.
d. Evaluate factors to consider in determining personal preparedness for parenthood. (i.e., biological, social, emotional, financial, educational)
e. Discuss ways parenting skills can be developed.
f. Evaluate the demands and rewards of parenting.

Objective 2: Explain the importance of nurture and nature.
a. Discuss nature (heredity) and its implications.
b. Evaluate the impact of nurturing upon all aspects of development.

STANDARD 2
Students will identify growth and development.
(Objectives may be integrated into each developmental age under standards 4 and 5.)

Objective 1: Identify generalizations of growth and development.
a. Identify and define the basic concepts of growth and development.
b. Define and identify physical, cognitive, social, emotional and moral development.
c. Describe the interrelationships between physical, social, emotional, moral, and cognitive aspects of development.

Objective 2: Describe the growth and development of the infant.

a. Identify the sequence of physical development of the infant.
b. Identify the height and weight gains during the first year of life.
c. Describe the emotional and social development of the infant.
d. Define and discuss stranger anxiety and separation anxiety.
e. Describe Erickson's stage of trust vs. mistrust.
f. Describe the ways infants learn through their senses.
g. Define and discuss object permanence.
h. Examine the reasons for infant crying and how to meet those needs.
i. Examine shaken baby syndrome and its ramifications.
j. Describe sudden infant death syndrome (SIDS) and prevention strategies.
k. Evaluate developmentally appropriate learning activities and materials for infants.

Objective 3: Evaluate appropriate learning activities based on the growth and development of infants.

STANDARD 5
Students will explain the growth and development of toddlers and preschoolers.

Objective 1: Describe the growth and development of the toddler.

a. Describe the physical characteristics and skills of toddlers.
b. Discuss the role of nutrition in the physical development.
c. Discuss readiness for appropriate toileting practices.
d. Describe the social and emotional characteristics of toddlers.
e. Discuss the importance of autonomy for a toddler's development.
f. Describe language development during the toddler stage.
g. Discuss the types and role of play for toddler age children.
h. Evaluate developmentally appropriate learning activities and materials for toddlers.

Objective 2: Evaluate appropriate learning activities based on the growth and development of toddlers.

Objective 3: Describe the growth and development of the preschooler.

a. Describe the physical characteristics and skills of the preschooler.
b. Identify the large and small motor skills developed.
c. Describe the social and emotional characteristics of the preschooler.
d. Discuss the development of social skills learned during the preschool years.
e. Describe the cognitive development of the preschooler.
f. Discuss the importance of literacy in cognitive development.
g. Describe the development of understanding between reality and fantasy.
h. Discuss the types and role of play for preschool age children.
i. Discuss how to teach moral behavior to the preschooler.
j. Evaluate developmentally appropriate learning activities and materials for preschoolers.

Objective 4: Evaluate appropriate learning activities based on the growth and development of preschoolers.

STANDARD 6 Students will practice age-appropriate positive guidance techniques and strategies for coping with challenging situations.
(Objectives may be integrated into each developmental age under standards 4 and 5.)

Standard: 1
Objective: 1

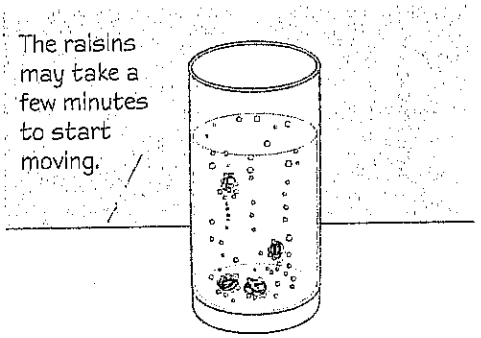
Activity:	**Describe Activity:**	**Supplies needed:**
Bobbing bouncing raisins	Get sprite soda and pour ¾ into a tall glass. Then drop a few raisins in it. Wait a minute and you will see the chemical reaction.	• Sprite soda • Glass • raisins
Key concepts taught: • **Different types of parenting:** ***Authoritative***(assertively democratic- best balance in parenting a kid), ***Authoritarian***(very controlling and strict- typically because he or she feels like they don't have control of their life and finds an alternative way of taking control) and ***Permissive***(allowing your child to do what-ever she or he wants w/o consequences). • **Consequences in the moment:** When a child acts out- instead of waiting for multiple negative behaviors to occur before giving a consequence- it is more effective to deal with each situation as it arises. When you build up all the negative behaviors the child usually does not comprehend it well, and will make that mistake again.		

• **Balancing negative w/ positive:** When a child is done with time out- it is most effective to: right when they do something right to reward them. This shows that he or she did something GOOD so they will repeat this. While teaching to your child is good- make sure to always give positive re-enforcement or balance out the negative with the positive, so when they do something well- they will be more likely to be motivated to do it again.		

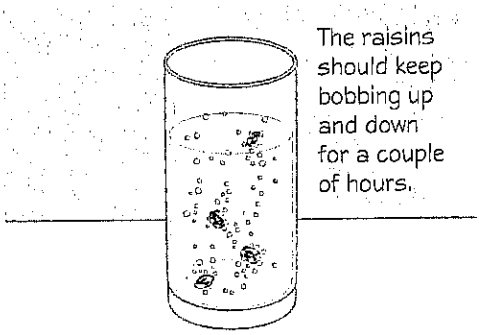
Bobbing bouncing raisins

YOU WILL NEED: an unopened bottle of clear lemon-lime soda, a tall glass, raisins (small ones work best)

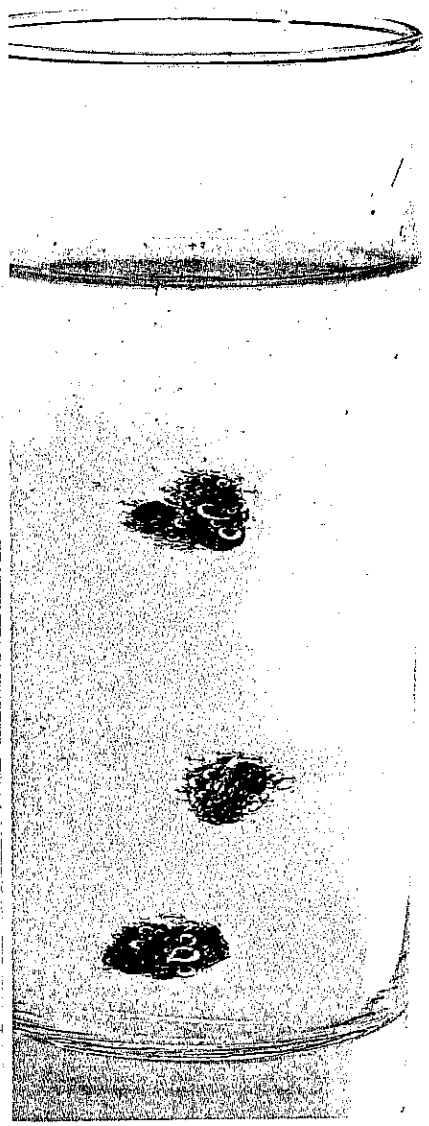
1. Carefully unscrew the lid of a bottle of soda and take it off. Pour the soda into a tall glass, until the glass is about three-quarters full.

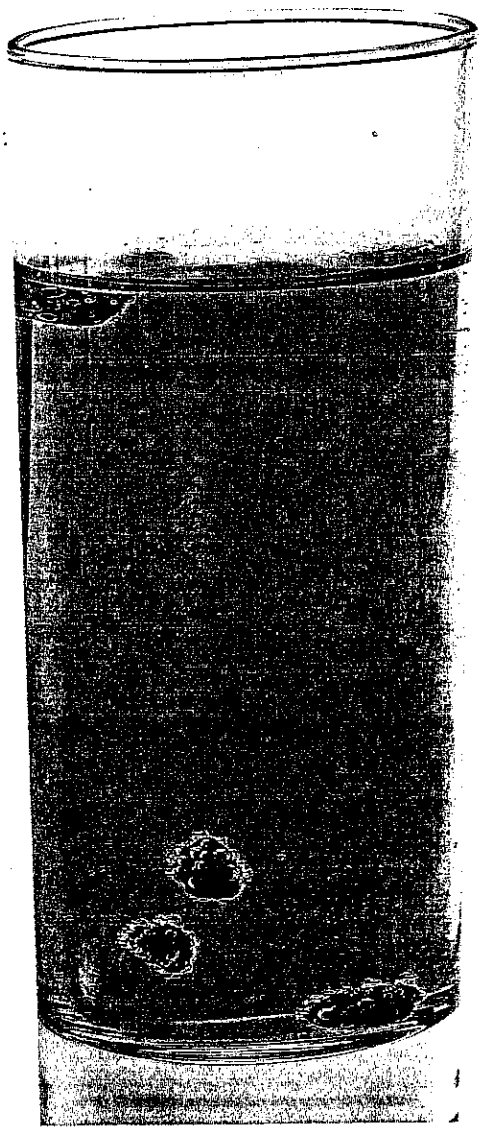


2. Drop several raisins into the soda, then watch to see what happens. The raisins will sink to the bottom, then start to float to the surface.



3. Keep watching the raisins. Each time they float to the surface, they will stay there for a moment, then sink down to the bottom again.





Bursting bubbles

Fizzy drinks are crammed with lots of tiny bubbles of a gas called carbon dioxide. The bubbles are lighter than the liquid they're in, so they float up to the surface. When you drop raisins into the soda, lots of bubbles stick onto them, and carry them up to the surface. When some of the bubbles burst, the raisins sink down again and start to collect more bubbles before bobbing up again.

You could stir a couple of drops of food dye into the soda.

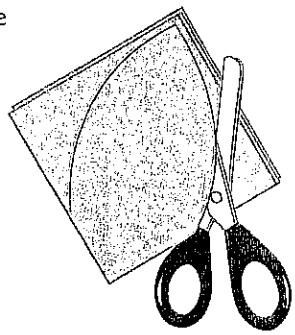
Standard: Standard 2 (students will identify growth and development) objective 1 and objective 2.

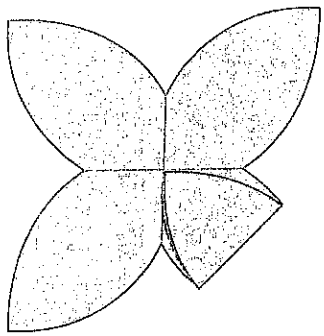
Activity	Describe Activity	Supplies Needed
Booming flowers	We will be making flowers out of paper, these flowers start out as folded (un-bloomed) flowers and when they are places in a bowl of water they will bloom. We are also going to write facts about growth and development of a toddler on the peddles of the flowers.	• Paper • Scissors • Glue • Water • bowl
Key Concepts Taught: • identify and define the basic concepts of growth and development. • Define and identify physical, cognitive, social, emotional, and moral development. • Describe the interrelationships between physical, social, emotional, moral and cognitive aspects of development. • Recognize that the study of child development is based on research.		

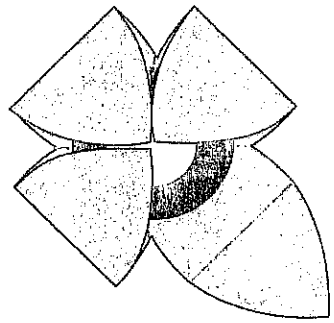
Floating Flowers

YOU WILL NEED: paper and a bowl

Cut along the lines through the layers of paper.



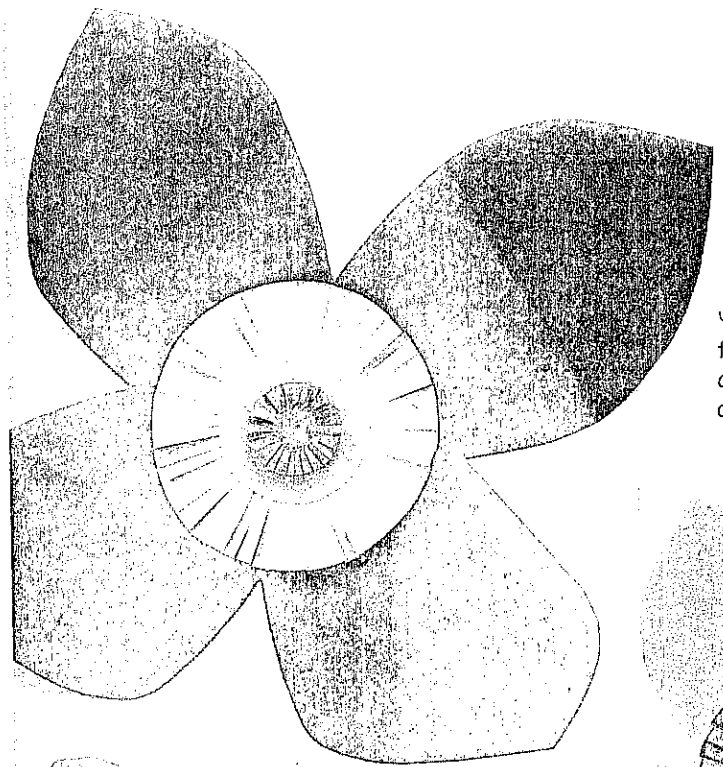




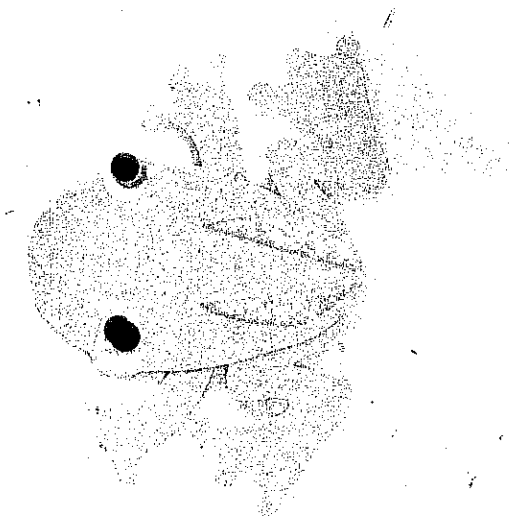
1. Cut out a square of paper. Fold the paper in half, then in half again. Draw a petal shape coming from the folded corner, then cut it out.

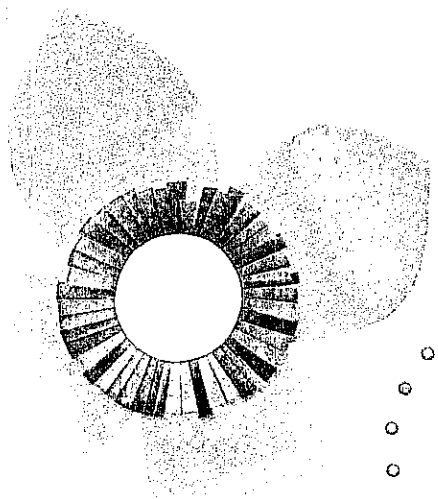
2. Open out the paper. Then, fold the tip of each petal into the middle, like this. Crease each fold well, then unfold the flower again.

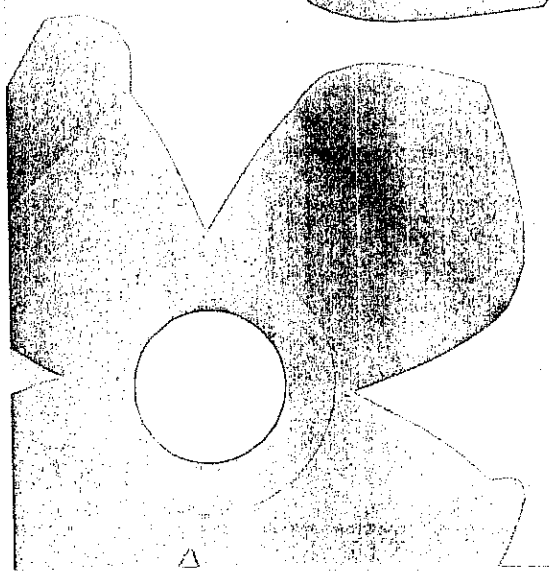
3. Cut a paper circle for the middle. Lay it on the flower, then fold down the petals. Fill a bowl with water, then place the flower on the water.



You could make flowers from different types of paper.



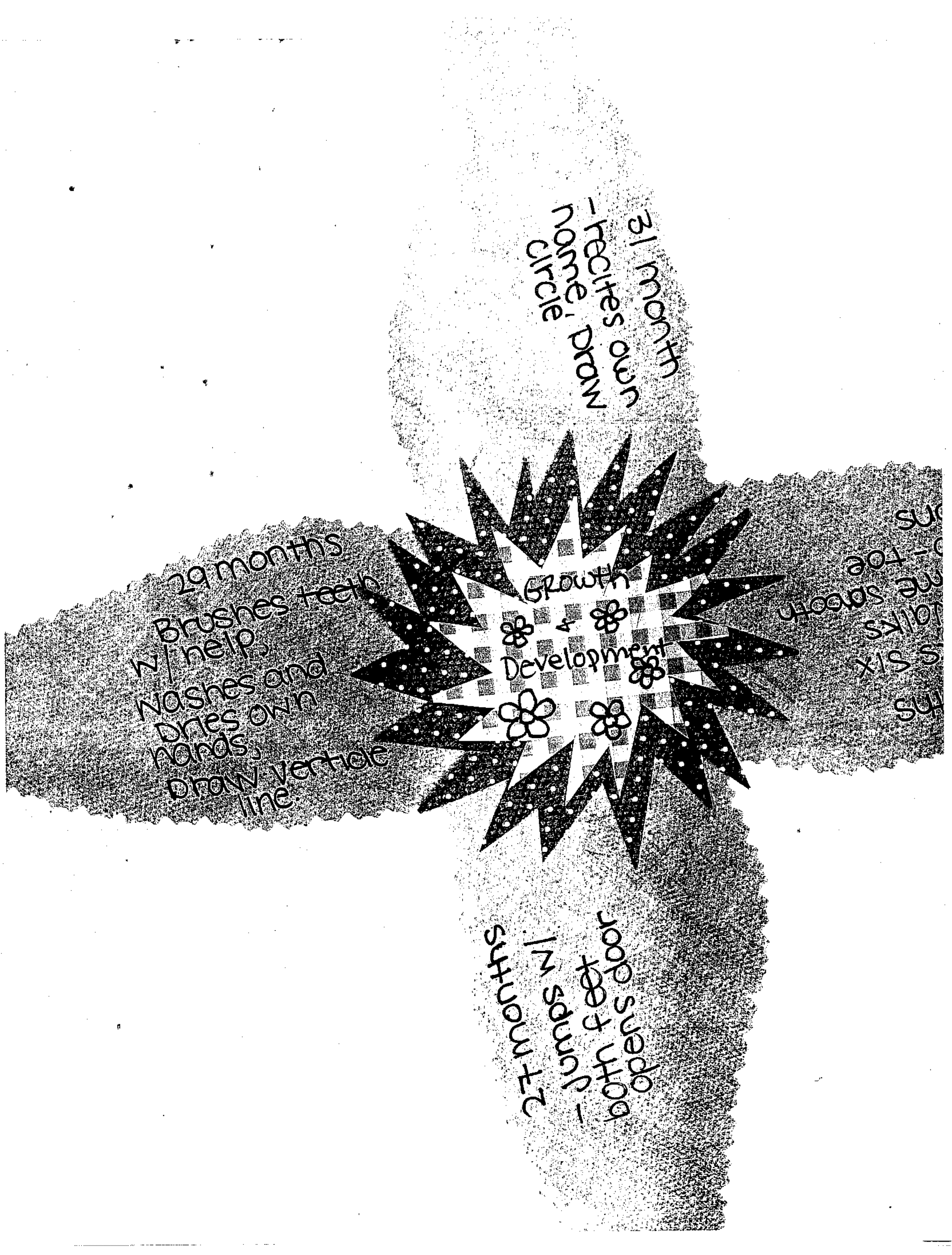




Flowers made from very absorbent paper will open quickly, but thicker, less absorbent paper will open more slowly.

Soaking in

Paper is absorbent, which means that water can soak into it. As the flower absorbs the water, the tiny strands that make up the paper swell. They push out as they grow, forcing the paper petals to open.



Growth
&
Development
31 month
- recites own
name, Draw
circle
29 months
Brushes teeth
w/ help,
washes and
Dries own
hands,
Draw verticle
line.
27 months
- Jumps w/
both feet
opens door

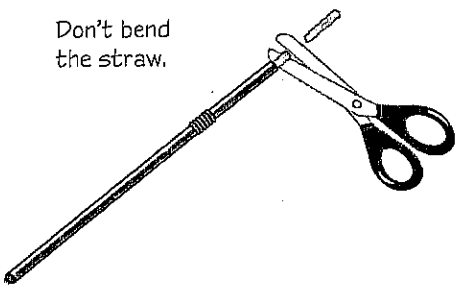
Standard: Standard 3 (Students will identify characteristics of prenatal development.)

Objective: 4 Parental Development.

Activity	Describe Activity	Supplies Needed
Swirly Snake	In this lesson we will define the main terms dealing with pregnancy by writing the terms on the swirly snake.	• Markers • Scissors • Straws • Poster tack • Construction paper
Key Concepts Taught: • Zygote • Embryo • Fetus • Umbilical cord • Placenta • Amniotic fluid • Amniotic sac • Uterus		

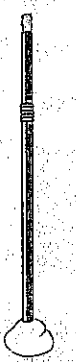
Swirly snake

YOU WILL NEED: a pipe cleaner, a drinking straw, poster tack, thick paper, pens or stickers for decorating



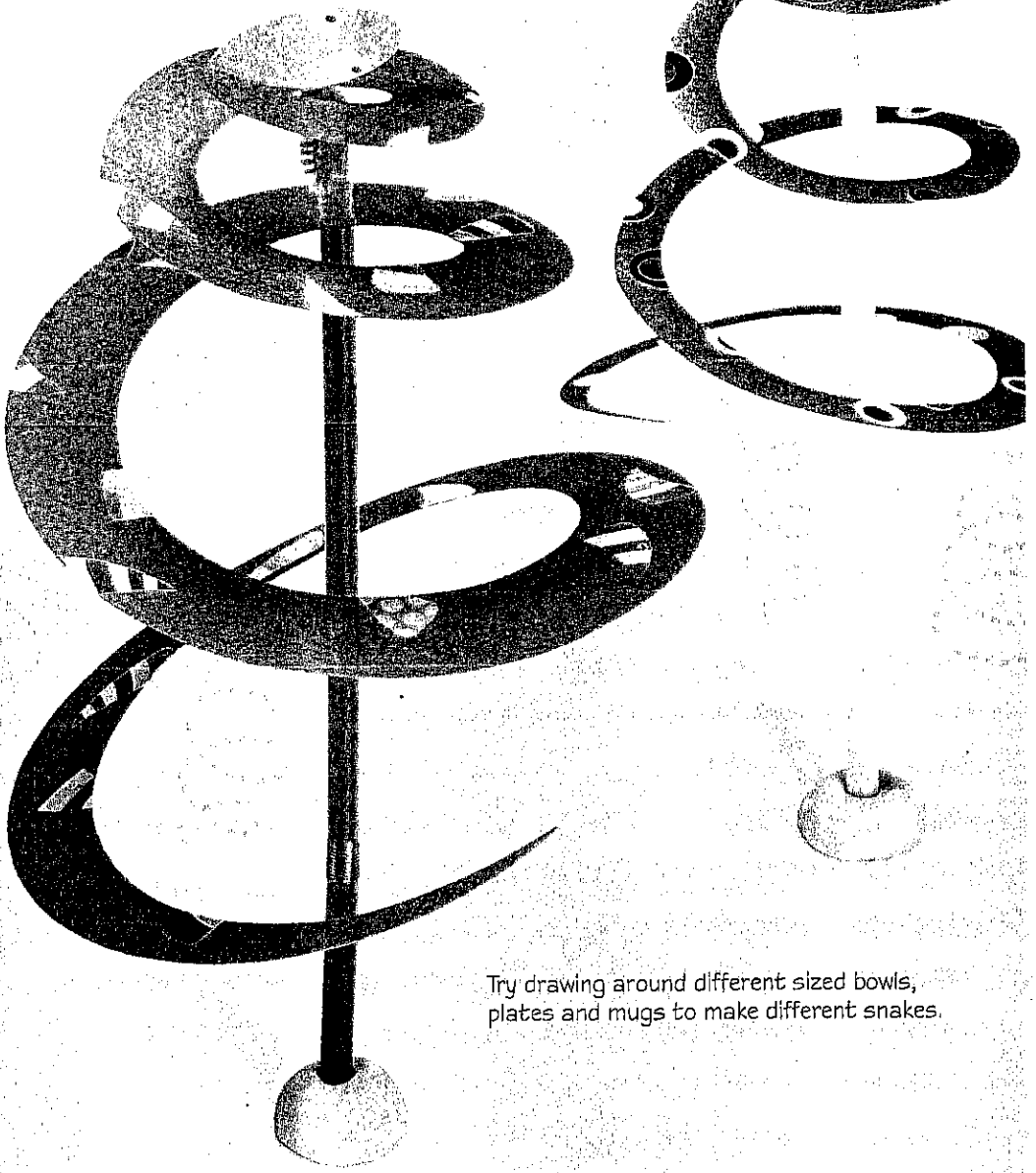
Don't bend the straw.

1. To make the stand, push a pipe cleaner through a drinking straw, so that one end sticks out of the top. Trim the end so that it is ½ inch long.

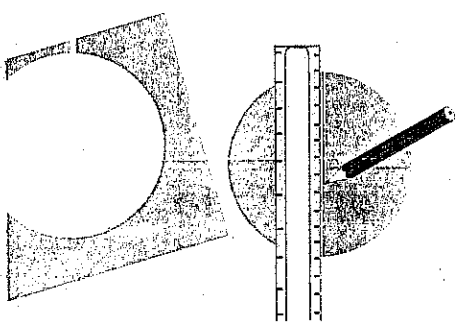


A heavy, wide base will make the stand more stable.

2. Press a big blob of poster tack onto a flat surface, for the base. Then, firmly push the bottom of the straw into the poster tack, like this.

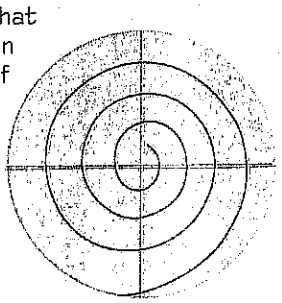


Try drawing around different sized bowls, plates and mugs to make different snakes.

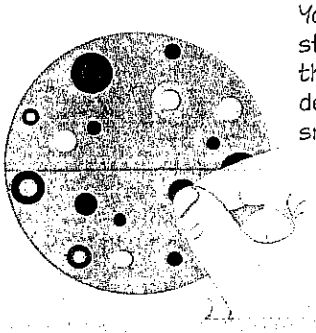


3. For the snake, draw around a small bowl or mug on a piece of thick paper. Cut out the circle, then draw a straight

Make sure that the head is in the middle of the circle.



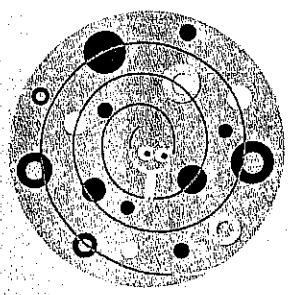
4. Draw another line across the middle of the circle. Draw a shape for the snake's head around where the lines cross,



You could use stickers from this book to decorate the snake's body.

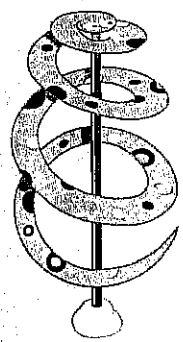
5. Turn the paper over. Then, draw or stick on spots around the circle. Try not to put spots in the middle of the

Glue the tongue onto the back of the head.



6. Turn the paper over and cut around the spiral and head. Turn the snake over again, then cut out and glue on eyes and a forked tongue.

Gently blow the snake to make it swirl around on the stand.



7. Rest the middle of the snake's head on the top of the pipe cleaner. Move the snake around a little to make it balance perfectly.

Perfectly balanced

Everything on Earth is pulled down to the ground by gravity. As the snake is pulled down, its weight is spread evenly around a point called its center of gravity. Thi point is below its head, withir the space formed by its body. When you rest the snake on the pipe cleaner, it balances perfectly around its center of gravity.

Zygote: A newly formed cell when the sperm and egg unite.

Embryo: A baby from conception until about ten weeks.

Fetus: This is what the baby is called from ten weeks gestational until birth.

Umbilical cord: connects the baby to the placenta, a thicker part of the outer membrane.

Placenta: where the baby and mother communicate.

Amniotic fluid: water filled sac with 2 membranes.

Amniotic Sac: Thin white line surrounding the baby.

Uterus: Female organ where the baby Grows.

Standard	Activity	Describe activity
Standard 4 Objective 2	Fingerprinting birth defects	1. Teacher will choose groups 2. Each group will look up 10 different birth defects 3. They will choose 1 person to fingerprint on their poster 4. After fingerprinting they will write each defect and a brief description under the print. 5. After completeing the poster and checking it off with the teacher they will present it to the class 6. Each group will go and write down the other groups birth defects on the given sheet.
Key Concepts: • Students will learn different birth defects. • They will learn what to do if their child has one • They will learn how to prevent them • Students will learn the corralation of DNA(fingerprinting) and birth defects.	**Supplies Needed** • Posters • Artist chalk • Clear tape • List of birth defects sheet • Fill in sheet • Markers	

Birth Defect Facts:

Name	Cause	Treatment	Description

A

- Aicardi syndrome
- Albinism
- Amelia and hemimelia
- Amniotic Band syndrome
- Anencephaly
- Angelman syndrome
- Aposthia
- Arnold-Chiari malformation

B

- Bannayan-Zonana syndrome
- Bardet-Biedl syndrome
- Barth syndrome
- Basal Cell Nevus syndrome
- Beckwith-Wiedemann syndrome
- Benjamin syndrome
- Bladder exstrophy
- Bloom syndrome

C

- Cat Eye syndrome
- Caudal regression syndrome
- Sotos syndrome Cerebral Gigantism
- CHARGE syndrome
- Chromosome 16 Abnormalities
- Chromosome 18 Abnormalities
- Chromosome 20 Abnormalities
- Chromosome 22 Abnormalities
- Cleft lip/palate
- Club foot
- Congenital adrenal hyperplasia (CAH)
- Congenital Central Hypoventilation Syndrome
- Congenital Diaphragmatic Hernia (CDH)
- Congenital insensitivity to pain with anhidrosis (CIPA)
- Congenital pulmonary airway malformation (CPAM)
- Conjoined twins
- Costello syndrome
- Craniopagus parasiticus
- Cri du chat syndrome
- Cyclopia
- Cystic fibrosis

D

- De Lange syndrome
- Diphallia
- Distal Trisomy 10q
- Down syndrome

E

- Ectodermal Dysplasia
- Ectopia cordis
- Ectrodactyly
- Encephalocele

F

- Fetal Alcohol Syndrome
- Fetofetal Transfusion
- Freeman-Sheldon syndrome

G

- Gastroschisis
- Goldenhar syndrome

H

- Harlequin type ichthyosis
- Heart disorders (Congenital heart defects)
- Hemifacial Microsomia
- Holoprosencephaly
- Huntington's disease
- Hirschsprung's Disease, or congenital aganglionic megacolon
- Hypoglossia
- Hypomelanism or hypomelanosis (albinism)
- Hypospadias

I

- Imperforate anus
- Incontinentia pigmenti
- Intestinal neuronal dysplasia
- Ivemark syndrome

J

- Jacobsen syndrome

K

- Katz syndrome
- Klinefelter syndrome
- Kabuki syndrome

L

- Larsen syndrome
- Laurence-Moon syndrome
- Lissencephaly

M

- Marfan syndrome
- Microcephaly
- Microtia
- Monosomy 9p-
- Myasthenic Syndrome
- Myelokathexis

N

- Nager's Syndrome
- Nail-Patella syndrome
- Neonatal Jaundice
- Neurofibromatosis
- Neuronal Ceroid-Lipofuscinosis
- Noonan syndrome

O

- Ochoa syndrome
- Oculocerebrorenal syndrome

P

- Pallister-Killian syndrome
- Pectus Excavatum

- Pierre Robin syndrome
- Polydactyly
- Prader-Willi syndrome
- Proteus syndrome
- Prune belly syndrome

R

- Radial aplasia
- Rett syndrome
- Robinow syndrome
- Rubinstein-Taybi syndrome

S

- Saethre-Chotzen syndrome
- Schizencephaly
- Sirenomelia
- Situs inversus
- Smith-Lemli-Opitz syndrome
- Smith-Magenis syndrome
- Spina bifida
- Strabismus
- Sturge-Weber syndrome
- Syphilis, Congenital

T

- Teratoma
- Treacher Collins syndrome
- Trichothiodystrophy
- Triple-X Females
- Trisomy 13
- Trisomy 9
- Turner syndrome

U

- Umbilical hernia
- Usher syndrome

W

- Waardenburg's syndrome

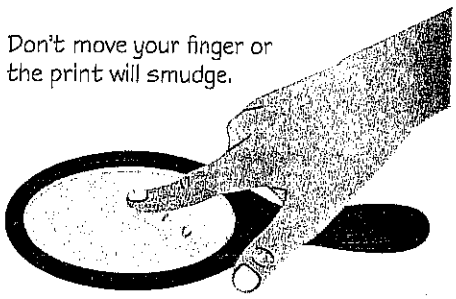
- Werner syndrome
- Wolf-Hirschhorn syndrome

Other Birth Defects

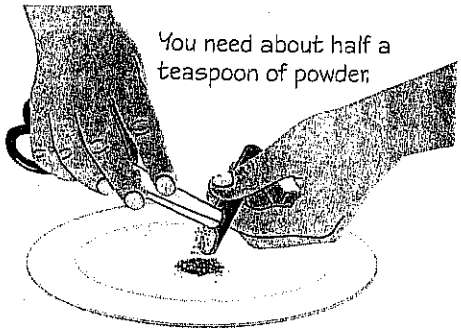
- Cleft lip / palate
- Club foot

Detective work

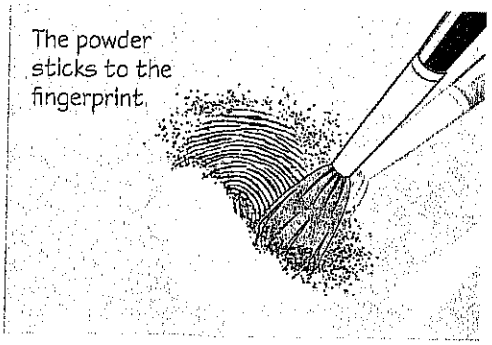
'OU WILL NEED: chalk or a chalk pastel and clear tape



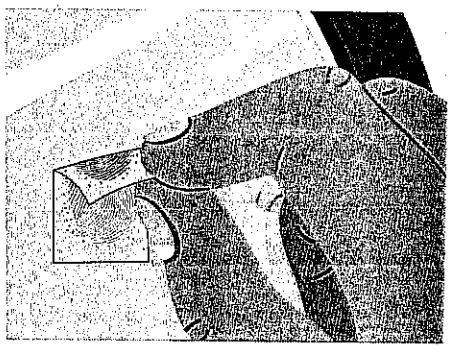
. Press a finger onto a clean
irror, or other glass surface.
rease from your skin will
tay on the surface when
ou lift your finger off.



2. Hold a pair of scissors with the blades together. Scrape them down a piece of chalk over a plate, so that the chalk powder falls onto it.

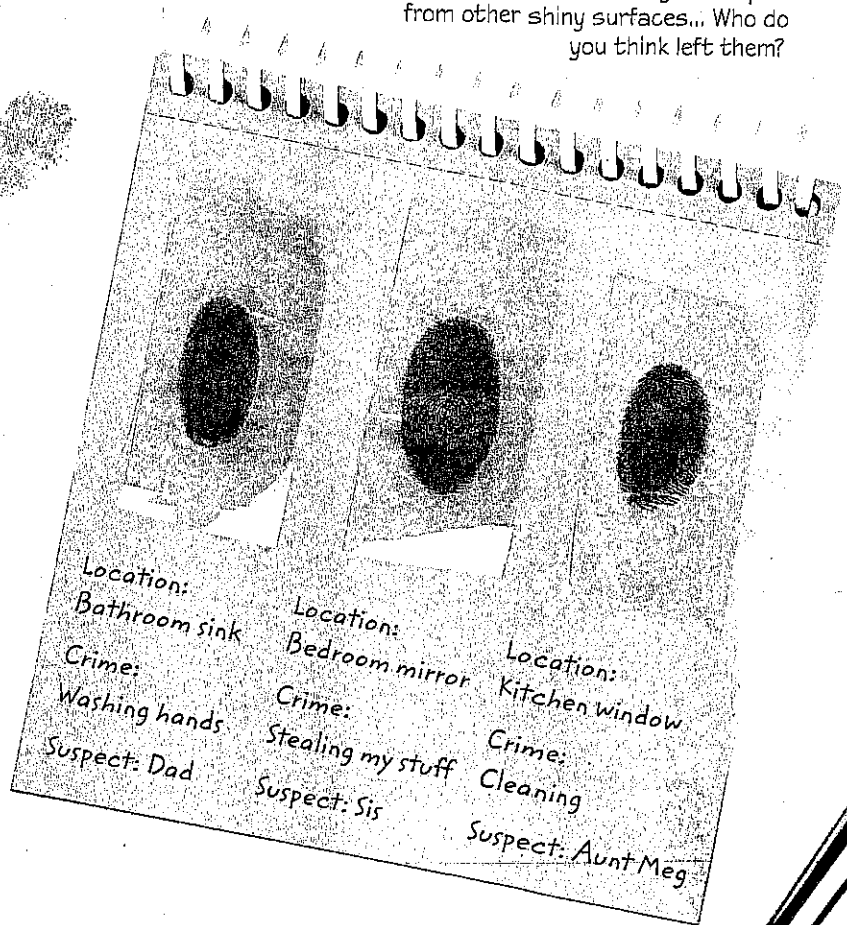


3. Dip a small, dry brush into the powder. Carefully dust lots of chalk powder onto the fingerprint. Then, gently blow off any excess powder.



To lift the fingerprint off
e mirror, carefully lay a
ece of clear tape onto the
int. Press the tape flat,
en peel it off.

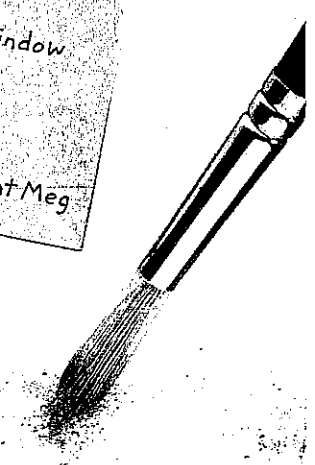
You could go around your house and try to lift prints from other shiny surfaces... Who do you think left them?



Catching criminals

Every fingerprint is
different. This means that
fingerprints can be used to
catch criminals. Forensic
scientists lift prints from a
crime scene and check them
against criminal records.
If they find a match, then
they know that person
was at the crime scene.

If you can't get a good print, try pressing your finger onto your forehead, then making a print.



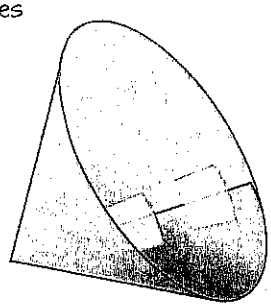
Standard 7 Objective 1

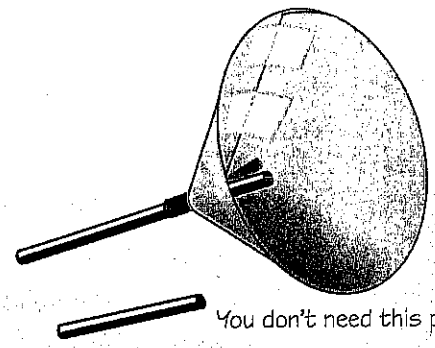
Activity:	Describe activity:	Supplies needed per one:
Floatingball game	When you blow throughthe straw a jet of air whooshes up under the foil ball. This high pressure jet sends the ball up into the air. As the air flows up the sides of the cone, it spreads out and looses pressure. The foil ball bounces around as it hits the high low air pressure above the cone.	One sheet of think paper A bendy drinking straw Poster tack Foil
Key concepts taught: • Germs spread by coughing, sneazing or breathing. • Colvering the mouth helps keep germs away from others. • To keep your toddler from getting sick make sure that they wash their hands frequently, vaccines, and make sure that they get a lot of sleep and eat right	Procedure: • This experiment shows all of this by the cup as the kids mouth and the foil ball as the germ • When the mouth is not covered the germs fly and go everywhere creating the atmosphere of sickness. • Try the experiment again with your hand two inches above the cone. This shows how to prevent germs.	

Floating ball game

YOU WILL NEED: thick paper, a bendy drinking straw, poster tack, foil

Tape the edges on the inside and outside of the cone.





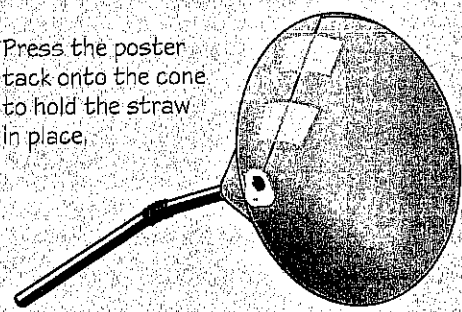
You don't need this piece.

You could decorate the cone with stickers from this book.

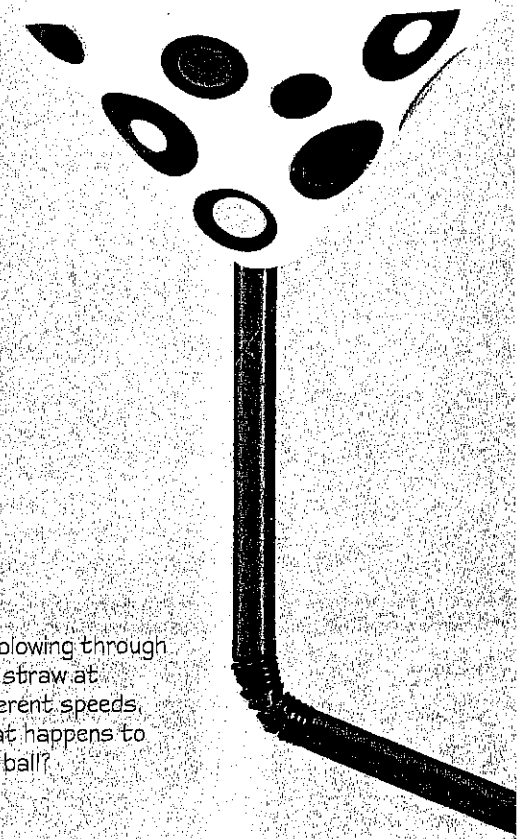
1. Draw around a mug on thick paper, then cut out the circle. Make a cut into the middle, then bend the sides around to make a cone. Tape the edges.

2. Cut a small piece off the point of the cone. Push the short end of a bendy straw into the hole. Then, cut a piece off the bottom of the straw.

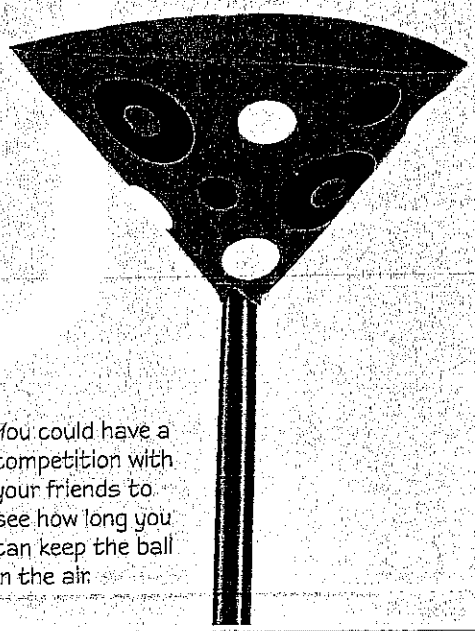
Press the poster tack onto the cone to hold the straw in place.



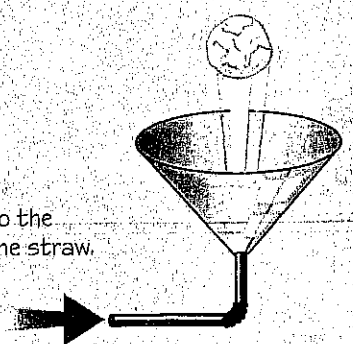
3. Press poster tack around the end of the straw. Then, slide the straw down until the poster tack is resting in the bottom of the cone, like this.



Try blowing through the straw at different speeds. What happens to the ball?



You could have a competition with your friends to see how long you can keep the ball in the air.



Blow into the end of the straw.

4. Scrunch a piece of foil into a ball that is about the size of a cherry. Put the ball in the cone. Bend the end of the straw and blow through it.

High pressure

When you blow through the straw, a jet of air whooshes up under the foil ball. This high pressure jet sends the ball up into the air. As the air flows up the sides of the cone, it spreads out and loses pressure. The foil ball bounces around as it hits the high and low air pressures above the cone.